

TELE-TECHNO CONFERENCE



Participants:

1. Carl Geiger, Syracuse.....315 423-2041 (synaps)
2. Chuck H^{ey}er, Rochester..... 716 244-1259 461-4882
3. Kevin Kenney, New York...Merc.....212 673-9363
4. Dave Jones, Binghamton.....607 723-9509
5. Parry Teasdale
Chuck Kennedy..... 914 688-7084

In addition there may be someone from Buffalo participating
but we won't know about that until Thursday.

Friday June 13

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May 9

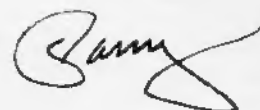
TELE-TECHNO CONFERENCE

Thursday, May 15, 1975

5:00 PM

Dear Fellow Technoids,

This is the agenda for the first TELE-TECHNO phone conference (it needs a snappy name, y'know) scheduled for this Thursday, May 15, at 5:00 PM. For this first time I think we should try to stick close to this agenda for maximum efficiency and minimum confusion. If for some reason you can't be by the phone or aren't sure that your line will be clear or if your number is incorrectly listed below - Please, LET ME KNOW IMMEDIATELY! If you have any other questions, just call. Otherwise I'll speak to you Thursday at 5:00.



Agenda

- I. Introduction of all participants to each other
- II. Questions about, and ammendments to agenda
- III. Porta-pak technology
 - A. Maintenance
 - B. Modifications
- IV. Editing and transfer systems
 - A. Maintenance
 - B. Modifications
- V. New commercial hardware and processes
 - A. VTRs
 - B. Cameras
 - C. Accessories (TBC's, proc amps, etc.)
- VI. New equipment and circuit design
- VII. Discussion of test equipment pool
- VIII. Open discussion
 - A. Assessment of this conference
 - B. Arrangements for next conference

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June 4, 1975

TELE-TECHNO NOTES
From the telephone conference of 5/15/75

(These are my notes from the first Tele-Techno Conference held Thursday, May 15. They aren't a transcription of the audio tapes made at the time and I haven't used those tapes in the preparation of these notes ((in fact, we had...uh, er... "technical difficulties" here and erased some of the tape but between Dave Jones in Binghamton, and us, the whole tape could probably be put together if anyone really needs it)). The call lasted 81 minutes and had to be ended before the complete agenda had been taken up. This was due partly to the time taken by introductory niceties and partly to the the time necessary to cover such subjects as porta-pak maintenance tips which shouldn't take so long in the future.

It seems that everyone is interested in the general subject computer/video interface and that is why that subject is given priority on the agenda for next time - FRIDAY, JUNE 13, 5:00. That's about it for now, except that it would be good for everyone to keep in mind that the agendas for these conferences are not one way things - if you have any suggestions, additions, etc., call or write here or have your suggestions ready to go at the beginning of the next conference. 'Be speaking to you on FRIDAY, JUNE 13, at 5:00 PM.)

NOTES:

PT - Parry Teasdale, Media Bus
CK - Chuck Kennedy, " "
CH - Chuck Heuer, Portable Channel
KK - Kevin Kenney, MERC
CG - Carl Geiger, Innervision
DJ - Dave Jones, Experimental TV Center
DM - Don McArthur, " "" "

I. Initial introductions; acknowledgement that conference was being audio taped; agreement on agenda.

II. Porta-pak tech:

CH - mechanical parts on the Sony AV-3400 really need to be replaced (at regular intervals). Two frequently troublesome transistors are Q59 and Q60 on servo board. Motorola makes good replacements for them which can be easily mounted on the outside of the servo board.

KK- The picture quality of the Panasonic portapak seems better than that of the Sony but the Panasonic isn't as rugged. The slip rings in the Panasonic pak wear quickly.

CH - The slip ring problem is true of all panasonic equipment.

DJ - Found it necessary to change all the slide switches in one of his paks (Sony).

CH - Also found that necessary.

CK - Stability of all Sony 3400's adversely effected by movement of the pak. Also, most 3400's seem to have a ringing problem during H sync.

CH - it might be possible to get rid of that problem by modifying the camera to have an increased blanking time.

Viewfinder tubes in the Sony AVC 3400's lose focus with age. The best solution to an unfocused viewfinder monitor is to replace the tube.

CK - Any suggestions about the whine on the 3400 audio?

CH - Many possibilities for a ground loop to develop with the AV/AVC 3400 system. One solution might be to eliminate the ground return for the power supply and cut down on the possibility of a ground loop.

Possible to put crystal sync into a 3400 using the sync board from an AV-8400 mounted at 90° to the servo board of the 3400. Not possible to use a Sony BP-20 with that configuration.

Panasonic paks use an LC, not a crystal oscillator.

III. Editing and Transfer Systems:

CH.- we use 2 Panasonic NV3130's for editing. The edit deck is modified for vertical interval edits and video only inserts. The modified vtr: "L-cuts" (changing in mid-edit between video and audio modes) presented a problem of power supply overloads which could only be remedied with extra power supplies for the relays. Also, it was necessary to change machine over from fusible resistors to regular fuses. Video only insert involves a 4P-DT relay. Vertical interval edit modification consists of 6 transistors and a quad latch and runs (works) at 30Hz. The schematics for these modifications are for sale but they are available for the personal use and evaluation to the participants of this conference.

Moire on edits with the Panasonic 3130 indicates a head change is necessary. The head assembly costs about \$50 and the Panasonic alignment tools cost about \$175. Portable Channel has those tools.

The capstan belt on the 3130 needs frequent replacement.

DJ - Found our unmodified 3130 not too reliable.

IV. New Commercial Equipment:

CH - Some Sony AV-8400's coming from the factory with the audio level set too high in record.

KK - The automatic threading on the AV-8400 ought to be disabled

CH - Panasonic is coming out with a color camera to go with its color portapak.

TEAC is getting into video equipment.

V. Experimental Equipment:

DJ - Finishing work on a keyer and colorizer and also have a time base corrector in the works.

DM - Working on a digital time base corrector (AtoD, DtoA conversion method) that will sell for under \$1,000.

KK - Hope that MERC is getting a PDP-11 computer donated.

CG - Synapse has an 8080.

Anyone want to buy DtoA converters in bulk in order to get a substantial discount? If so, call Synapse.

KK - MERC putting together an automatic frame to frame video editing system using a Sony 2850 (cassette) control box.

CH - Unsatisfactory results with 2850 system. Believe that it uses a timed rewind system that breeds inaccuracy.

CK - Presently working on:

vertical interval switcher

pnc amp using National Semiconductor EIA sync chip. Seems possible to phase lock the chip's clock to incoming sync. Still a few bugs left with the sync separator. Like to send schematics out to participants for evaluation as soon as they are ready.

VI. Settled on FRIDAY, JUNE 13 at 5:00 for the next call.



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June 4, 1975

TELE-TECHNO CONFERENCE
Friday, June 13, 1975
5:00 PM

AGENDA

- I. Acceptance of current agenda and notes from last conference
- II. Computer/video interface - general discussion
- III. Experimental equipment design
- IV. Test equipment pool
- V. Hardware update
 - A. Maintenance
 - B. New equipment

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NOTES page 2

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PARTICIPANTS (6/13/75):

PT - Parry Teasdale, Media Bus, Inc.
CK - Chuck Kennedy, " " "
KK - Kevin Kenney, MERC
CG - Calr Gieger, Innervision
DJ - Dave Jones, Experimental TV Center, Ltd.
DM - Don McArthur, " " " "

I. Notes from previous conference accepted as received

II. Computer/video discussion

CG.- We're presently working with converting the whole video frame to digital information.

DJ - What's the resolution?

CG - 300 to 400 points per line, 3 bits - 8 grey levels per line. There's a PDP-10 here which can process this information.

Right now we're working with an 8080 microprocessor and are using it to control analog modules like a sync generator which is used to tell the computer where it is in the frame. We can make images by controlling other analog modules such as gates. Eventually we'd like to be able to process video images.

We need a teletype interface. Also, we now have a CVS 500 time base corrector.

KK--We're still waiting for our donated PDP-11 at MERC. It would be necessary to develop some sort of input-output system for it so that it can be processing and storing information in real time. I'd be interested if anyone had any ideas for real time processing.

DM - We're taking the video signal, converting it to digital form, manipulating it digitally and getting it back to analog form in real time.

CK - By changing the way the priority encoder works by switching lines?

DM - Right. If you encode in 16 levels of 4 bits and consider all the possible logical functions of 4 variables it turns out to be 2⁶⁴. The processes to do this are still in the design and construction phase.

We're also working on other systems one of which is for the Vasulkas in Buffalo. We're using an LSI-11. One system

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will use the computer to generate a control signal which changes frame by frame. The control signals are stored in their own registers either as single numbers or as arrays and they in turn will be used to generate video signals. For example, the computer can control an oscillator frequency or waveform.

The system for Woody Vasulka will use a series of programmable function generators interfaced with the Rutt-Etra raster control. It's the only way to go if you look at the information rate. At frequencies of 4 or 5 MHz there's no way to generate video at that rate.

We're setting up right now for 6 bits (on our time base corrector). I get 64 grey levels at a low sampling rate and 100 lines resolution. As the sampling rate speeds up the resolution drops off.

DJ - This data is used for remixing and sifting back through a conventional DtoA.

CG - We're waiting for the assembler to arrive for our computer system and also for the disc operating system. That should take about another four months. We're also waiting for the cassette interface for the software. Right now we're in the middle of building the interface between the computer and the outside world. I've built the circuitry for the Intel 8080 to decode which of the output and input devices you want to talk to. We're working with a few simple experimental programs right now but we really have to wait for the assembler and the cassette interface. So we really haven't had a chance to work with it very much.

CK - Do you get any ROMs with the MITS 8080 kit?

CG - No ROMs. The only program that has to do with a ROM is a bootstrap program and you really don't need it there because there are ways to get around it.

It's relatively simple to address the 8080's output ports. Increasing its output ports is also relatively simple using OR gates and IC's.

CK - I have an 8080 assembly language manual here if anyone wants to have it.

CG - We have one here too.

CK - Also, there is now a place where you can buy IBM selectric computer terminals for \$900.

DJ - We have a tele-type tape reader which cost us about that.

DM - Carl, are you essentially treating each of your output devices as a memory location?

CG - No. The Intel 8080 takes low order 8 bits of address lines and it sends a separate output out on the other pins as output instructions. The output instructions together with the lower 8 bits of the address gives you an output. It's possible to encode more than 256 input-output devices. The problem with that is that you have to encode in lines and it's not necessary until you have more than 256 input-output devices.

CK - Can't you use a P-ROM?

CG - You'd have to have a very fast ROM - 400nsec.

III. Experimental equipment design

DJ - The keyer I've been working on now works with 3 video inputs. It has selective grey level key and soft and hard edge key functions. To control grey levels it uses a couple of differential amplifiers built with transistors. I also built my own comparator with transistors. I took the output of the differential pairs, which gave me soft edge keying, and fed it into the input of a 1445. The second input of that 1445 was the same signal fed through a hex inverter which hardened up the key edges. I took the output of that 1445 and ran it to the control input of another 1445 to do the actual switch from signal to signal.

I've found that most comparators I've dealt with are very noisy.

We're running all our equipment at ± 12 and ± 5 VDC.

CG - There's a place called Cybernetic Systems in Kentucky that sells 12volt, 8amp power supplies for around \$22. They also sell other computer related hardware.

DJ - I guess we can find them in the Gold Book.

When the keyer is finished I'll send the schematics to Lanesville to be distributed to everyone.

CG - I can do the artwork for circuit boards.

DJ - We have friends in Utica who will be producing circuit boards for us. They have all the wiring hardware.

CG - I haven't ordered any of those DtoAs we talked about last time. Haven't analysed their function in the video range. I'll be in touch with DM this week.

IV. Test Equipment pool

PT - If everyone will send an inventory of their test equipment here, we'll circulate the lists to everyone on the line. Maybe after we know what each other has we can get together to share some of the more esoteric hardware. Also, please include any specific piece of equipment you are looking for.

DJ - Does anyone have a scope with a rise time of faster than 20 nsec.?

CG - I have a Tektronix 453 portable 50MHz. scope and access to a 150MHz scope which you can use.

DJ - We'll be up.

V. Hardware Update

PT - Bill Claghorn at Adwar video told me that the tilt on the back porch of H sync from the Sony AVC3400 camera can be cured. In the service manual there are a number of components shown on the parts list with an asterisk(*). These are selected components and their values are critical. Sometimes Sony doesn't select so well and these parts fall short of their stated value. If

they are replaced with the proper components the tilt can be straightened out which helps immeasurably for processing and time base correcting tapes made with those cameras.

Also, we passed complete edited tapes edited on the Sony AV-8650 through the time base corrector onto quad at the TV Lab in NYC. Some of the original material was shot with Sony paks (3400) and some was as old as fourth generation. The only processing done during editing was level and pedestal correction done through our Panasonic VY-922 SEG.

KK - We have a Sony SEG-1A and it seems that they didn't bother to include any sync mixing on the output. As a result there has to be an input on every button or there are severe instabilities. It seems to be a design flaw. The output is DC coupled.

DJ - Could you use a 1445 for a sync mix modification?

KK - I'm going to have to do something like that.

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July 17, 1975

NOTES ON SECOND TELE-TECHNO CONFERENCE June 13, 1975

Like last time these notes are not a transcript of our conversation but rather a condensation of my notes. This time however, I did work with the tape recording of the conference though the quality of that recording left a lot to be desired (next time we're going to insist on good connections - Syracuse is always weak - so it may take a little longer to get started on August 8). If there are gaps in the notes we can remedy that at the beginning of the next conference.

The last call took 47 minutes as compared with 81 minutes for the first call. I would assume that without cramping discussions we can keep the calls to about 30 to 40 minutes from now on. There is no arbitrary cut-off point, short or long.

CONGRATULATIONS!! to Chuck Heuer. It was kind of funny to have the conference operator say, "I'm sorry, Mr. Heuer is not available for the call, he's on his honeymoon." (Do people still do that?!!)

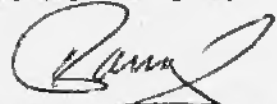
Someone new will be on the line on August 8 - Ken Jesser of Intermedia Art Center in Huntington, L.I.

As of this writing I have received no test equipment inventories and no schematics to duplicate and circulate. I'm still very interested in the inventories since I'm sure none of us has access to all the hardware we'd like to use. The sooner the better on those lists and anything else you want sent around.

The new agenda includes a section on print materials relevant to video and computer/video work - both books and periodicals. Most of the information can and should be exchanged over the phone with a follow up in these notes. So please, try to have any print material you'll be referring to in front of you at 5:00 on the 8th so that we can get down publishers, cost, etc.

There is also an item about equipment evaluation and purchase procedures - how we're all doing it and how it can be improved. I think it's a good idea to talk about this now because N.Y.S. Council \$\$\$ will soon be flowing and all of us will probably be involved with some equipment purchasing decisions.

Be speaking to everybody on FRIDAY, AUGUST 8 at 5:00 PM.


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September 13, 1975

Howdy,

Here's some information about the the upcoming conference at Maple Tree Farm(that's here, by the way). The dates are definitely Friday and Saturday, October 10 and 11. It would be good if everyone could arrive by 11:30AM on Friday so that we can sort out names, faces and accomodations before we get on with the business of the lay.

That first day's business will be talking with each other and with the representatives of the hardware companies. Tektronix, 3M and Adwar Video Corp. have definitely agreed to be here. Tektronix has a new low-cost line of scopes (T-900 series) some of which their representative will bring with him. He may bring some other goodies too. Bill Weston of 3M will be at the Video Expo show in New York until October 9th, so he doesn't know what equipment he can bring besides their new low-cost proc amp. Sam Adwar has agreed to supply a Panasonic NV-3160 editing VTR, the new portable Panasonic color camera and, best of all, Bill Claghorn, their head technical person. Bill will be bringing along some of his latest projects. Also, Ken Jesser is going to ask Keith Collins of Concord Video to come. According to Ken, Collins has a lot of information about the present state of the giant Japanese video industries.

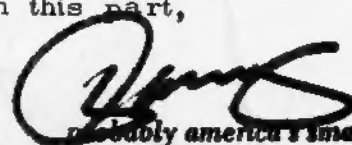
The phone conference originally scheduled for the 3rd of October is canceled in favor of this meeting the following week. I'll try to have the notes from the last phone conference, including the technical bibliography, ready by the 10th.

The hardware people(except for Bill Claghorn) are only invited for Friday. Saturday should be a bit calmer - at least until it gets towards evening. Saturday night is our Lanesville TV local broadcast night. If you have any ideas they'll be welcome. We go on the air at 7PM sharp. We stay on til we're done.

Everyone who works with a NYSCA funded organization should keep receipts for all travel expenses to and from this conference. The Council will cover them.

I'll be calling or writing to everyone one or more times before the 10th. If you have any questions, problems or suggestions, just call me here. There is lots of land here for camping out. We'll provide beds (indoors) for those less hardy souls. We'll also have food to last through Sunday mid-day. If you want to bring something that would be nice but it's certainly not necessary. See you on the 10th, 11:30 AM.

Do not press strongly and put anything heavy on this part,



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October 5, 1975

Howdy,

A few last minute details like how to get here, etc. are in order. A hastily drawn map is enclosed. I think everyone has been here at least once before with the exception of Don. If anyone has any trouble finding the place, just call (or if you think you're in the immediate area, ask for "the Videos").

For those who haven't submitted one yet, please bring you hardware inventory list so we can exchange them here.

I've written letters to Bill Weston of 3M and Paul Laramee of Tektronix reminding them of their commitment to come and telling them how important all of us are.

Weston and Bill Claghorn of Adwar Video will probably both be a little late arriving on Friday. They have to get their goodies out of Madison Square Garden where Video Expo closes the night before. They have to wait in line for the unions to bring the stuff to them.

If anyone needs any special sleeping arrangements - a night light, wolfbane over the door, etc. please call me before Friday. If not, we'll see you some time after 11AM this Friday.



P.S. If anyone needs tickets to Video Expo, call Adwar Video in NYC- 212-691-0976 - they will have a booth at Expo and are giving out complementary tickets to people who contact them.



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October 14, 1975

Howdy,

The following is a list of the participants at the Lanesville Techno-Conference last weekend. I hope all the addresses are current. I have a few pages of scribbled notes and a lot of extra Tektronix material that were left here. If anyone would like them or has left anything of value here please let me know.

Lydia Silman of the N.Y.S. Council on the Arts is on vacation for another week or so. But, if everyone will hang on to their travel receipts I'll let you know how the reimbursements will be handled. The notes of the conference will follow sooner or later. Right now I'm still trying to gather up miscellaneous audio tapes from around the house.

CONFERENCE PARTICIPANTS

Carl Geiger; Innervision Media Systems Inc., 7160 W. Genesee St., Fayetteville, N.Y. 13066; or Synapse, Syracuse University, 315 Waverly Ave., Syracuse, N.Y. 13210. Tel: (Innervision) 315-637-8443; (Synapse) 315-423-2041

Chuck Heuer; Portable Channel, 8 Prince St., Rochester, N.Y. 14607. Tel: 716-244-1259.

David Jones; Experimental TV Center, Ltd., 164 Court St., Binghamton, N.Y. 13901. Tel: 607--723-9509.

Kevin Kenney; M.E.R.C., 4 Rivington St., N.Y.C. 10002. Tel: 212-673-9363.

Don McArthur; Cybertronics, 12-14 Central Ave., Cortland, N.Y. 13045. Tel: 607-753-6171.

Ken Jesser; Media Study/Bufalo, Sidway Building 502, 775 Main St., Buffalo, N.Y. 14203. Tel: 716-847-2555.

Bill Claghorn; Adwar Video Corporation, 100 Fifth Ave., N.Y.C. 10011. Tel: 212-691-0976.

Paul Laramee; Tektronix, Inc., 31 Haight Ave., Poughkeepsie, N.Y. 12603. Tel: 914-454-7540.

Parry Teasdale & Chuck Kennedy; Media Bus
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